

On 15th August, 1966 I saw an adult bird perched near its nest and the same bird incubating later the same day. The nest was a loose collection of sticks and contained three eggs on the 15th August: it was at a height of about 20 feet in a mangrove tree *Avicennia nitidia* some few yards from the edge of one of the lagoons. The eggs were pale blue in colour and unfortunately were not measured. Two other nests of *M. ardesiaca* were in separate trees some fifteen yards away and although the birds were incubating, the nests were not examined. The Reef Heron *D. gularis* is the common breeding heron and was also incubating in a tree nearby. All these nests suffered from predators which were probably the Pied Crow *Corvus albus*.

I am indebted to Mr. A. E. Enti of the herbarium of the University of Ghana for identifying the plants mentioned in the note.

In the June 1966 issue of the *Bulletin of the Nigerian Ornithologists' Society* Vol. 3, No. 10, Hopson describes the breeding of *M. ardesiaca* in a mixed colony of herons near Lake Chad. Breeding took place in February, March and April and all nests examined contained four eggs and were from two to four feet above the water. Breeding records are described for the winter 1964-65. In 1965-66 the area was much drier and no breeding took place.

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On the moults and breeding season of the Long-tailed Starling *Lamprotornis mevesii* (Wahlberg)

by R. K. BROOKE

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Traylor (1965) following Benson (1959) pointed out that *Lamprotornis mevesii* might undergo its complete moult before rather than after breeding. He collected freshly moulted birds in January. He believed that they had laid in August and September when most starlings in Ngamiland lay, but noted that Benson (*op. cit.*) believed that *L. mevesii* bred during the rains. Brooke (1965) showed that this species lays during the rains from December to March. Since then I have examined seven fledglings in the National Museum, Bulawayo, and of these one is calculated to have come from an egg laid in December and six from March-laid eggs. In addition, Dowsett (*in press*) records observations on a nest started at the beginning of March. These further records making twenty-eight in all, confirm that the species is a rains breeder. Nonetheless K. E. Cackett (*in litt.*) has seen copulation in mid-September at Chiredzi, Rhodesia.

When visiting the National Museum, Bulawayo, recently through the courtesy of the Curator and the Ornithologist, Mr. M. P. Stuart Irwin, I was able to examine a series of more than 140 specimens from Zambia,

Botswana (formerly Bechuanaland Protectorate), Rhodesia and the Tete Province of Mozambique with a view to elucidating their moults and amplifying Traylor's (1965) comments. The results are set out in Table I but certain points must be made in the text. In the first place the duration shown for each moult covers a series of specimens. I think each individual may take half the period shown since early moult may occur well after the start of a period shown in the table and late moult well before the end of a period.

The pre-juvinal moult is described by Dowsett (in press). The post-juvinal moult affects only the abdomen whereby the black feathers with slight purple tips on the flank feathers only are replaced by iridescent purple feathers with virtually no copper shade apparent at any angle. The feathers of the juvenal plumage are more fragile than those arising from a complete moult and abrade more rapidly.

The first pre-nuptial moult begins with the mantle, nape and secondaries and only after this is well underway do the breast, tail and primaries start moulting. Most skins are prepared by cutting the abdominal skin and extracting the torso. This damages and disarrays the abdominal feathers and so I find it difficult to be sure when the abdominal moult occurs. The moult of the primaries is a descending one and that of the secondaries is in general ascending, though the individual secondaries, of which there are eight, may not moult either in sequence or even at all. I am unable to determine the order of moult in the twelve rectrices partly because few specimens show it and partly because it is jumbled and certainly not consecutive. It may even be that not every tail feather is dropped in the pre-nuptial moult. In addition one of the central pair is always carried on top of the other and thus wears much more quickly.

The first adult plumage is identical with later plumages and presumably the birds breed when just under a year old. The first post-nuptial moult affects the mantle and nape and in a few examples some (or all) of the tail feathers. The second (and later) pre-nuptial moults are similar to the first pre-nuptial but moult in the different tracts starts more nearly contemporaneously and that of the outer primaries is protracted, no doubt because it is superimposed on the breeding season. In distinguishing the first and second pre-nuptial moults I have been guided by the presence or absence of copper iridescence, its absence indicating the first pre-nuptial and its presence the second (or a later) pre-nuptial moult. Its presence is the only obvious character for distinguishing adult from immature birds.

It appears that this species' long legs keep their bodies from much contact with the ground and vegetable substrate and so their underparts are not much abraded. Thus the copper iridescence on the abdomen remains largely intact from one moult to another. The corollary of their high stance is that they push against things above them and thus abrade nape, mantle and the uppermost central rectrix and so require a post-nuptial moult of these feathers.

Virtually nothing is known in detail of its diet (fruit, berries and insects according to McLachlan and Liversidge, 1957; since then Benson, 1959, has recorded breeding birds eating termites, beetles, small black ants and mole crickets) and of seasonal shortage and abundances. Since most other *Lamprotornis* starlings (*L. australis* (Smith)) is a rains breeder, Benson and

TABLE I — Times of egg-laying and moult in *Lamprolotornis mevesii*

July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apl. May June

Egg-laying

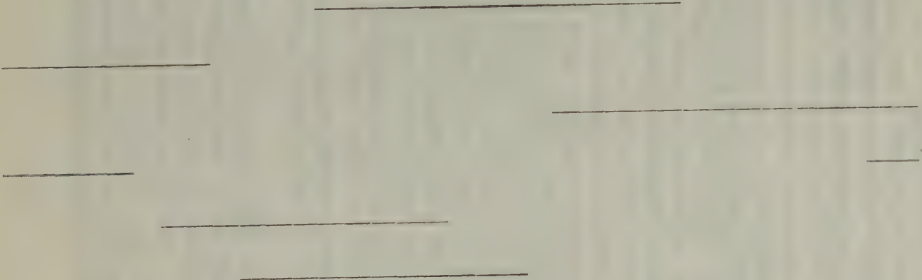
Pre-juvenal moult

Post-juvenal moult (partial)

1st pre-nuptial moult (complete)

1st and later post-nuptial moults (partial)

2nd and later pre-nuptial moults (complete)



Pitman 1966) breed in September, October and November in the areas occupied by the Long-tailed Starling they must also find feeding easy at this time and hence the occurrence of the complete moult of *L. mevesii* at that time. The difference in breeding season may be due to different food preferences or to some avoidance of competition either for food or nest sites.

During the winter there is a decline in the number of insects in the areas where it lives (K. E. Cackett *in litt.*) so it may well be that there would not be sufficient food to support fledglings and complete moults simultaneously. Whistler (1940) describes a very similar breeding and moult regime in *Carduelis spinoides* Vigors the Black-headed or Himalayan Greenfinch whose general ecology as a submontane seed eater (Whistler 1928) appears to have nothing in common with a fruit and insect eating starling of the arid lowlands.

I am obliged to Messrs. C. W. Benson, M. P. Stuart Irwin and M. A. Traylor for criticising the draft of this paper.

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Postscript: Since drafting the above text an interesting breeding record has come to hand. Mrs. H. R. Gillett of Chipinda Pools, Lundi R., Rhodesia, had a pair of Long-tailed Starlings visit her garden between 23rd April and 2nd May with the juvenile *Clamator* cuckoo they were looking after. She thought the species was *C. jacobinus* (Boddaert) but it is *C. glandarius* (L.) which parasitizes starlings in southern Africa.

A new subspecies of the Ruby-cheek (*Anthreptes singalensis*) (Gmelin) from Java

by A. HOGERWERF

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A small series of this sunbird secured on Java's most western peninsula, Ujung Kulon, does not fit into *phoenicotis* known from the remaining part of Java nor in the populations known from the surrounding regions.

When comparing equal series of six males of *phoenicotis*, *sumatrana* and *borneana*, from Java, Sumatra and Borneo respectively, it seems quite impossible to separate Sumatran and Bornean specimens on account of